

AIoT0-W680

High-Performance ATX Industrial Motherboard

AIoT0-W680 is a standard ATX industrial motherboard with extensive I/O for AI deep learning and machine vision, including automated inspection, image analysis, automated production, and testing.



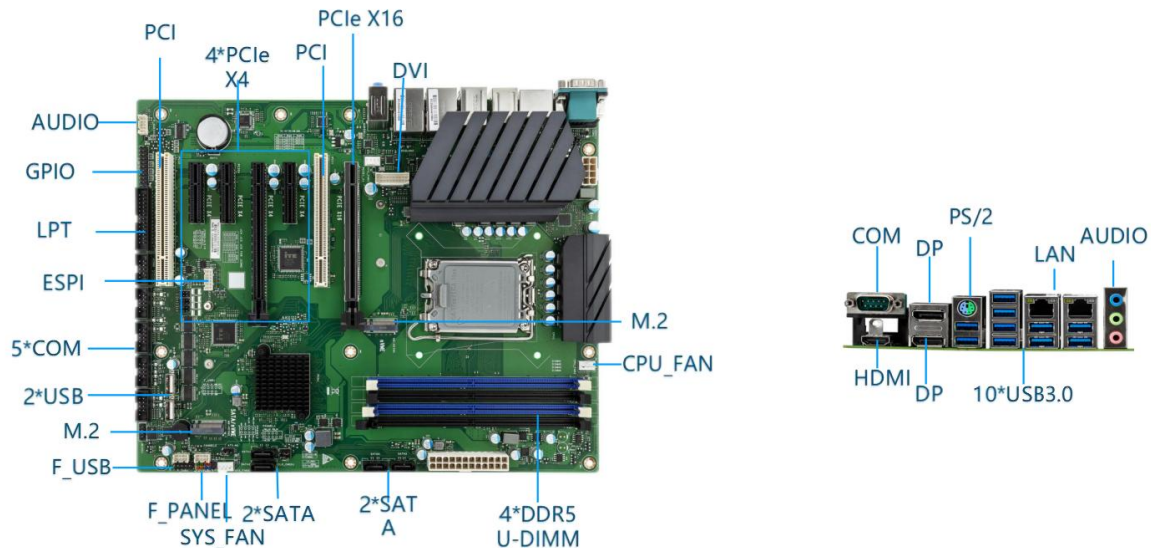
- Supports 12th–14th Gen Intel® Core™ i9/i7/i5/i3 CPUs (LGA1700) (G-series not supported); up to 125 W TDP; vPro on i5 and above
- 4 DDR5 UDIMM slots, up to 128 GB
- 5 PCIe slots; expandable to up to 22 GbE ports
- 10 USB 3.2 ports for industrial cameras
- Quad display / 4 SATA / 2 GbE / 14 USB / 6 COM / 1 PCI / 6 PCIe
- High-Tg PCB for stable operation across a wide temperature range
- Industrial-grade I/O protection against ESD and surges
- Optimized I/O layout minimizes interference and simplifies expansion
- Supports dual GPUs for AI and machine vision applications

01 Specifications

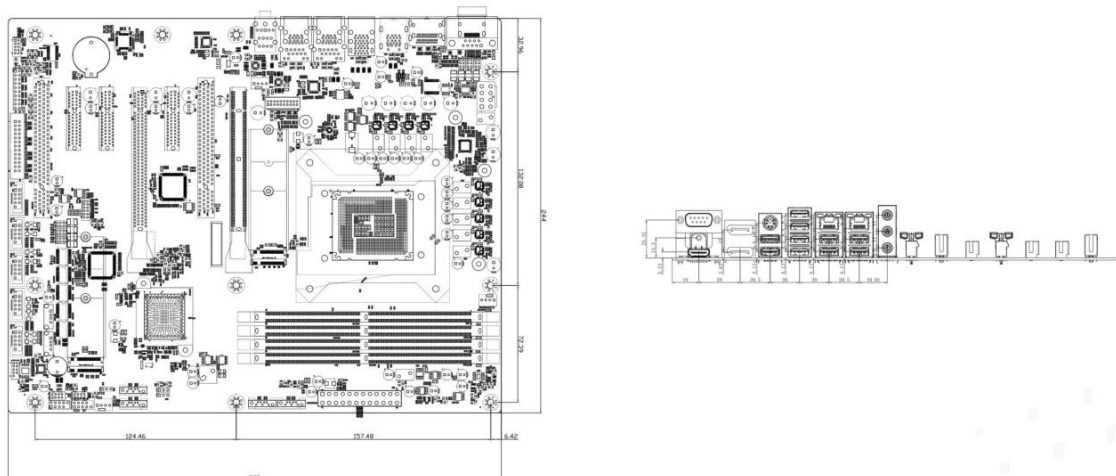
CPU	Supports 12th–14th Gen Intel® Core™ i9/i7/i5/i3 CPUs (LGA1700; no G-series); up to 125 W TDP; vPro on i5+
Chipset	Intel® W680 chipset
Memory	4 DDR5 UDIMM slots; dual-channel and ECC memory support; up to 32 GB per DIMM, 128 GB total 12th Gen CPUs: DDR5-4800 with 2 DIMMs (black slots); DDR5-4000 with 4 DIMMs 13th/14th Gen CPUs: DDR5-5600 with 2 DIMMs (black slots); DDR5-4000 with 4 DIMMs
Graphics Controller	Intel integrated graphics; varies by CPU
Display Outputs	4 independent displays: 2 × DisplayPort, 1 × HDMI, 1 × DVI-D HDMI: 3840 × 2160 @ 60 Hz; DP: 5120 × 2160 @ 60 Hz; DVI-D: 1920 × 1080 @ 60 Hz
Storage	4 SATA 3.0 ports (6 Gb/s); supports RAID 0/1/5/10 2 M.2 2242/2280 Key-M slots for NVMe; M.2 Key-M2 supports SATA/NVMe auto-detection
Audio	Rear I/O: Mic-In, Speaker-Out, and Line-In; onboard F_AUDIO header for front-panel audio
Network	2 Intel Ethernet ports: LAN1: i226-LM/V, 2.5 GbE; LAN2: i219V
USB	Rear I/O: 10 USB 3.2 Type-A ports (2 × 10 Gb/s, 8 × 5 Gb/s); 4 onboard USB 2.0 ports F_USB1 and F_USB2 are alternative front-panel USB headers for chassis cables with different pin spacing
Parallel port	1 * parallel port
Serial port	6 serial ports: COM1/COM2 support RS-232/422/485; COM3–COM6 support RS-232
Keyboard & mouse	1 rear I/O PS/2 combo connector for keyboard and mouse
Digital I/O	16-bit digital I/O; +5 V logic level, with power and ground
LPC / eSPI	1 eSPI bus (2 × 6-pin header; supports expansion to 4 serial ports)
TPM interface	Onboard SLB9670 security chip; supports TPM 2.0
Power	ATX power input; supports AT and ATX power-on/off modes FPANEL1 and FPANEL2 are alternative front-panel headers for chassis cables with different pin spacing
Expansion bus	1 × PCIe 5.0 x16 slot, up to 64 GB/s bandwidth 1 × PCIe 4.0 x16 slot (x4 electrical), up to 8 GB/s bandwidth 1 × PCIe 4.0 x4 slot, up to 8 GB/s bandwidth 2 × PCIe 3.0 x4 slots, up to 4 GB/s bandwidth 2 standard PCI slots (32-bit)
Operating Temp. /Humidity	–10° C to 60° C; 0–90% RH, non-condensing; 85–105 kPa
Non-operating Temp./Humidity	–40° C to 85° C; 0–90% RH, non-condensing; 85–105 kPa

Watchdog	255-level programmable watchdog timer (seconds/minutes); timeout interrupt or system reset
BIOS	AMI UEFI BIOS
Operating System	Windows 10 x64, Windows 11 x64, Ubuntu 22.04 Linux
PCB dimensions (L*W)	305mm X 244mm

Product view



03 Dimensions



Product Selection

Product model	Chipset	Memory	Display	Storage	USB3	USB2	COM	LAN	PCI	PCIe
AlO10-W680	W680	4 DDR5	4(4)	4SATA	10	4	6	2	2PCI	5PCIe